

NOTES ON THE RANGE OF *MAIANTHEMUM CANADENSE*
AND ITS VARIETY *INTERIUS*.

F. K. BUTTERS.

IN 1904, Fernald¹ described as a new variety (var. *interius*) the pubescent form of *Maianthemum canadense* which occurs in the region of the Great Lakes and westward. At that time he found that all the specimens of this species from Michigan and eastward were glabrous, while with a single exception all those from "western Ontario, Manitoba, Saskatchewan, and Alberta, southward to South Dakota, Iowa and Illinois" were pubescent. More recently pubescent specimens have been found from Oswego County, N. Y.² and even from Massachusetts; while my studies of the flora of Minnesota indicate that both varieties are common in that state, though with quite distinct ranges. It seems worth while, therefore, to note as definitely as possible the range of the two varieties, both in Minnesota and in the country at large.

Typical *M. canadense* (the glabrous form) is, as Fernald pointed out, northeastern, but it extends down the Alleghenies to North Carolina, and westward along the upper Great Lakes into Minnesota, being confined in that state almost entirely to the region of boreal coniferous forests. Of eighteen Minnesota specimens of this form in the herbarium of the University of Minnesota, seven are from north of Lake Superior, and all but two of the others are from the north central part of the state, reaching as far west as Lake Itasca. South of the region of general coniferous forest, it occurs very sparingly with other boreal plants in cold tamarack swamps near the eastern edge of the state as far south as St. Paul, and there is a single specimen from Lake City, Wabasha County, in the southeastern part of the state—a region where plants of relatively boreal character often occur sporadically.

Outside of Minnesota, but in the general region of the Great Lakes, there are specimens of typical *M. canadense* in the Minnesota herbarium from the following stations: WESTERN NEW YORK: Lowman's Swamp, Chemung Co., May 30, 1884, *T. F. Lucy*; rich deciduous woods, Van Etten township, Chemung Co., June 3, 1915, *L. H.*

¹ Fernald, M. L., *The Western Variety of Maianthemum canadense*. RHODORA xvi, 210 (1914).

² Fernald, M. L., and Wiegand, K. M., *Notes on some Plants of the Ontario and St. Lawrence Basins, New York*. RHODORA xxv, 219 (1923).

Mac Daniels, A. J. Eames, no. 3727; Ithaca, June 2, 1891, *Elias J. Durand* (a mixture of the two varieties). OHIO: woods, Parma. May 1, 1894, *J. R. Watson*; Berea, May, 1897, *G. B. Ashcroft*, flora of the Western Reserve. MICHIGAN: swamp, Lake Harbor, May 28, 1898, *L. M. Umbach*; moist rich soil, Grand Rapids, June 1, 1894, *Emma J. Cole* (mixed); moist woods, Hamilton, May 30, 1891, *C. L. Herron* (mixed). INDIANA: thickets, Pine, May 15, 1896, and July 9, 1897, *L. M. Umbach* (mixed). WISCONSIN: pine woods, St. Croix Falls, June 5, 1920, *F. K. Butters* (mixed). Fernald¹ also cites a specimen from Brown County, Wisconsin.

It appears, therefore, that this essentially northeastern plant extends along the whole length of the Great Lakes, that westward it becomes quite definitely a plant of the coniferous forest, and that along the southern border of its range it frequently occurs mixed with the pubescent variety.

Maianthemum canadense var. *interius* in Minnesota is distinctly a plant of the deciduous forest, and is particularly abundant in the rather acid oak woods of the east central and southeastern parts of the state. It is less common in the heavier forests which occupy the richer calcareous soils farther west, but it occurs there, and even in some of the prairie groves in the extreme western and northwestern parts of the state. It occurs occasionally in Tamarack swamps, and in such situations may sometimes be found growing with the glabrous form. For the most part it barely encroaches on the northeastern belt of coniferous forest, and when it does enter this region it is in company with the typical trees and herbs of the deciduous woodlands. Thus the only collection from north of Lake Superior is from eastern Cook County, a few miles back from Grand Portage, where it occurs in an almost pure forest of hard maple along with a number of other plants of relatively southern distribution. In the Minnesota herbarium there are 43 Minnesota collections of this variety, 15 of typical *M. canadense*, and three mixed collections, two from the vicinity of Brainerd, and one from Lake City.

In addition to the mixed specimens cited under typical *M. canadense* and the specimens cited by Fernald in his original paper, specimens of *M. canadense* var. *interius* have been seen from the following stations outside of Minnesota: MACKENZIE: Ft. Smith, June 25, 1901, *E. A. Preble & A. E. Preble*, plants of Canada (specimen in the Na-

¹ Loc. cit. 210.

tional Herbarium). NORTH DAKOTA: rich woods, Walhalla, July 8, 1912, *H. F. Bergman*. SOUTH DAKOTA: Piedmont, June, 1895, *Alice D. Pratt*. IOWA: woods, Fayette, May 20, 1894, *Bruce Fink*. WISCONSIN: Galesville, June 1, 1889, *Sidney C. White, Jr.* INDIANA: Lake Everett, Allen Co., May 26, 1916, *Chas. C. Deam*. NEW YORK: Sandy Creek Township, Oswego Co., Aug. 25, 1922, *M. L. Fernald, K. M. Wiegand & A. J. Eames* (Herb. Gray). MASSACHUSETTS: clay soil, Chicopee, May 18, 1913, *John Murdock, Jr. & G. S. Torrey* (Herb. N. E. Bot. Club—this specimen was kindly called to my attention by Professor Fernald).

It appears, therefore, that this essentially western variety, *M. canadense* var. *interius*, occurs sparingly eastward along the south side of the Great Lakes, and even in western New England. Apparently it does not follow the typical form into the more southern part of the latter's range in the southern Alleghenies, nor does it anywhere penetrate far into the northeastern coniferous forest.

The taxonomic relations of these two varieties have proved to be very interesting, but a discussion of these relations, and also of the taxonomy of the other species and varieties of the genus *Maianthemum* is reserved for another paper which is at present in preparation.

UNIVERSITY OF MINNESOTA.

POLYGONUM HYDROPIPEROIDES AND P. OPELOUSANUM.

E. E. STANFORD.

Polygonum hydropiperoides Michx., like many other early-described species, suffered from much early confusion in the literature. In its typical region it is an essentially well marked species, but material collected over a wide area, as represented by the collections of the Gray Herbarium, presents many puzzling variations in both habital and technical characters. Some, but by no means all, of these aberrancies have been described as varieties. The species often becomes semi-aquatic, but the characteristic ecological forms which mark *P. natans* and *P. coccineum* are absent. Many of the variations observed in the course of this study occur apparently as isolated examples in scattered areas; they are often characterized by a larger proportion of defective pollen than is usually found in more typical specimens, but, unlike the amphibious species, they are usually